

[002]                    This application is a national stage completion of PCT/FR2003/002381  
filed July 28, 2003 which claims priority from French Application Serial No.  
02/10029 filed August 6, 2002.

[003]                    FIELD OF THE INVENTION

[005]                    BACKGROUND OF THE INVENTION

[009]                    SUMMARY OF THE INVENTION

[022]                    BRIEF DESCRIPTION OF THE DRAWINGS

[031]                    DETAILED DESCRIPTION OF THE INVENTION

16. (NEW) An interlacing device (10, 10') for a machine (1) which palletizes elongated products (2) that are designed to be deposited in superimposed rows on at least one transport pallet (7), characterized in that it comprises at least one interlacing gantry (11, 11') extending generally parallel to and along at least a portion of the length of said products (2), said interlacing gantry (11, 11') comprising at least one guide (20, 20') supplied by at least one spool (12) of interlacing material (12'), said interlacing device (10, 10') also comprising drive means connected to said interlacing gantry (11, 11') for displacing it between at least two alternate end positions so as to displace the guide (20, 20') in at least one interlacing plane (P) that is essentially perpendicular to said palletized products (2) alternately from one side to the other of said transport pallet (7).

17. (NEW) The interlacing device according to claim 16, wherein the drive means cause the interlacing gantry (11, 11') to pivot alternately at least one time.

18. (NEW) The interlacing device according to claim 16, wherein the drive means (14) cause the interlacing gantry (11, 11') to move in alternate translation at least one time.

19. (NEW) The interlacing device according to claim 16, wherein the drive means (14) are selected from the group comprising at least electric motors (15), hydraulic and pneumatic cylinders.

20. (NEW) The interlacing device according to claim 19, wherein the drive means (14) comprise at least one transmission system selected from the group comprising at least pinions and chain (16), pulley and belt.

21. (NEW) The interlacing device according to claim 18, wherein it comprises at least one chassis (19) equipped with guide means for moving the interlacing gantry (11, 11') translationally.

22. (NEW) The interlacing device according to claim 21, wherein the guide means comprises at least one pathway (18) formed in the chassis (19) to receive rollers (17) integral with vertical posts (11a) on said interlacing gantry (11, 11').

23. (NEW) The interlacing gantry according to claim 16, wherein it comprises at least two guides (20, 20') located on the interlacing gantry (11, 11') to distribute at least two interlacing ties (12') in at least two essentially parallel interlacing planes (P) distributed along the palletized products (2).

24. (NEW) The interlacing gantry according to claim 23, wherein at least one of the guides (20') is associated with activating means (21) which displace it in alternate translation along the interlacing gantry (11') for a predetermined distance (D) to displace the interlacing plane (P) essentially parallel to itself.

25. (NEW) The interlacing device according to claim 24, wherein the activating means (21) are selected from the group comprising at least electric motors, hydraulic and pneumatic cylinders.

26. (NEW) A palletizing machine (1) for elongated cylindrical products (2) comprising at least one gantry (3), one carrier (4) attached so that it moves in vertical translation along said gantry (3), at least one gripping device (5) attached so that it moves in horizontal translation on said carrier (4) and designed to remove said products (2) from a storage ramp (6) and deposit them on a transport pallet (7), characterized in that it comprises at least one interlacing device (10, 10') according to claim 16.

27. (NEW) The palletizing machine according to claim 26, wherein the interlacing device (10, 10') comprises at least one interlacing gantry (11, 11') having dimensions that permit it to be integrated within the gantry (3) of the palletizing machine (1) below said gripping device (5) and outside said transport pallet (7) and said palletized products (2).

28. (NEW) The palletizing machine according to claim 26, wherein the gripping device (10, 10') comprises means for controlling its drive means associated with the drive means for the palletizing machine (1) in order to displace said interlacing gantry (11, 11') alternately from one side of the transport pallet (7) to the other essentially parallel to the interlacing planes as the palletizing of the products (2) deposited on the transport pallet (7) progresses and according to a predetermined interlacing pattern.

29. (NEW) The palletizing machine according to claim 26, wherein at least one of the guides (20') on the interlacing device (10') is associated with activating means (21) designed to displace it in alternate translation along the interlacing gantry (11') for a predetermined distance (D) so as to displace the corresponding interlacing plane (P) essentially parallel to itself.

30. (NEW) The palletizing machine according to claim 28, wherein the control means are designed to control the means (21) for activating the guide (20') so as to wrap the interlacing material (12') around the posts (7') on the transport pallet (7) as palletization of the products (2) progresses and in a predetermined interlacing pattern.